IN THE CLAIMS:

Please cancel claims 4, 6, 7,13, 26 and 28 without prejudice or disclaimer of the subject matter thereof.

The following is a complete listing of claims in this application.

1. (currently amended) A method for data transmission over an optical network, the method comprising:

collecting, in at least one service collection unit, a plurality of services data in their original protocols from a plurality of different types of services to be transmitted, each said in at least one service collection unit including an optical transceiver;

processing the services data in their original protocols into packets; and

converting the services packets into optical signals on an optical fiber for transmission into a metro network; and

sorting the services data from a plurality of packets according to service type in an at least one aggregator module, each said aggregator module having an aggregator optical transceiver, coupled for optical communication to the service collection units, and aggregating like services for transmission over a compatible transport network.

2. (currently amended) The method according to claim 1 30, further comprising:

receiving said aggregated services data, from at least one network, in their original protocols in an one of said aggregator modules;

sorting or de-multiplexing the aggregated services data according to end destination;

processing the sorted services data into packets according to destination;

loading the packets onto an optical fiber for transmission to a more local network; and

unloading the packets from the ~~optical carrier frames~~ <u>fiber</u> in a service collection unit;

switching the packets to ~~their~~ local service ports <u>in said service collection unit</u>;

de-packing the packets to <u>different services data</u> ~~each service's original format~~; and

sending <u>data of</u> each service to an appropriate media.

3. (original) The method according to claim 2, further comprising the step of: inserting the processed packets into transmission frames, before said step of loading; and wherein said step of loading includes: loading the transmission frames onto an optical fiber for transmission.

Claim 4 (canceled).

5. (currently amended) The method according to claim 1, wherein the step of processing includes:

segmenting an incoming bit stream of services data;

adding a tag to a header of each segment, each tag including connection identification between a source and a destination end-point of the bit stream;

encapsulating said tagged segment into a <u>Packet-over-SONET (PoS)</u> ~~Point-to-Point Protocol (PPP)~~ frame; and

transmitting the ~~PPP packet~~ <u>PoS</u> frame over ~~a service collection unit's~~ <u>the</u> optical transceiver <u>of one of said at least one service collection unit</u>.

Claims 6-7 (canceled).

8. (Currently amended) The method according to claim <u>5</u>~~7~~, further comprising the step of switching said <u>PoS frame</u> ~~frames~~ between ~~a plurality of service collection unit's~~ <u>the</u> optical transceivers <u>of a plurality of service collection units</u> by means of a stream switch.

4

9. (currently amended) The method according to claim 5 6, wherein the encapsulated segment is scrambled, before said step of transmitting ~~mapping onto transmission frames~~.

. 10. (currently amended) The method according to claim 5, wherein the step of transmitting includes WDM multiplexing of optical signals from said optical transceivers of said service collection units with different specific wavelengths to be transmitted.

11. (currently amended) The method according to claim 5, wherein the step of segmenting includes segmenting ~~the~~ said incoming bit stream into variable-length segments.

12. (original) The method according to claim 5, further comprising the step of switching the tagged segment to an appropriate Trunk by a packet switch before said step of encapsulating.

Claim 13 (canceled).

14. (currently amended) The method according to claim 1, wherein the step of sorting includes: switching services data of a ~~same~~ single type of service to an ~~a same~~ aggregation sub-module for said single type of service.

15. (currently amended) The method according to claim 5 6, wherein the step of sorting includes: receiving incoming optical signals from said at least one service collection unit ~~units~~ in an ~~aggregator's~~ optical transceiver of one of said aggregator modules; and switching said incoming optical signals by means of a stream switch to a transmission framer for decapsulating said tagged segments ~~removing said PPP packets~~ from said PoS ~~transmission~~ frames.

16. (currently amended) The method according to claim 15, wherein the step of sorting further includes: reading tags on said decapsulated tagged segments ~~removed packets~~; and switching said segments ~~packets~~ to an one of said

~~Aggregator module~~ <u>aggregator modules</u>, according to ~~the connection identification indicated in~~ said <u>segment's</u> ~~packet's~~ tag.

17. (currently amended) The method according to claim 16, further comprising the steps of: removing the tag from each <u>segment</u> ~~packet~~ to provide a plurality of segments of ~~various~~ <u>said data of different types of</u> services; reassembling <u>data of</u> each <u>type of</u> to its original bit stream; and aggregating <u>data of each of said different</u> ~~like~~ services together for transmission over an appropriate network.

18. (currently amended) The method according to claim 17, wherein the step of aggregating includes multiplexing ~~several~~ <u>data from a plurality of different</u> services onto a single fiber over different wavelengths.

19. (currently amended) The method according to claim 17, wherein the step of aggregating includes aggregating services <u>data</u> of a single service type directly onto an optical fiber in an appropriate network.

20. (currently amended) The method according to claim 10, wherein the step of sorting includes: de-multiplexing incoming optical signals; and sending said de-multiplexed signals to ~~an aggregator's~~ <u>the</u> optical transceiver <u>of one of said aggregator modules</u>.

21. (currently amended) The method according to claim 1, further comprising the steps of: receiving aggregated services <u>data</u> from at least two networks in an aggregator, each service in its own protocol and at its own bit rate; sorting the services <u>data</u>, according to network destination; processing the services <u>data</u> in their original protocols into packets; adding a connection identification tag to each packet; switching each packet to an appropriate trunk optical fiber for transmission to a service collection unit.

22. (currently amended) The method according to claim 21, including encapsulating ~~inserting~~ said tagged packets into a Packet-over -SONET (PoS) transmission frame before the step of switching ~~transmitting~~.

23. (original) The method according to claim 21, wherein said step of sorting includes sorting by de-multiplexing.

24. (currently amended) The method according to claim 21, wherein said step of sorting includes separation of aggregated services data.

25. (currently amended) The method according to claim 22 ~~21~~, further including the steps of: receiving incoming packets from a plurality of trunk ports in a service collection unit optical transceiver; decapsulating ~~de-encapsulating~~ each encapsulated PoS ~~PPP~~ packet; switching each packet to a local network according to ~~a~~ said tag on the packet; stripping off said tag; reassembling all segments of each service to their original bit stream; and transmitting each service to a final destination over a local network appropriate for that service.

Claim 26 (canceled).

27. (currently amended) The method according to claim 25, wherein said step of receiving includes: receiving ~~incoming~~ transmission frames from a plurality of trunk ports in ~~a~~ said at least one service collection unit; switching said ~~incoming~~ transmission frames from ~~an~~ the optical transceiver of said service collection unit to at least one transmission framer; and de-packing said ~~the~~ transmission frames.

Claim 28 (canceled).

29. (currently amended) The method according to claim 25, wherein said step of transmitting includes: passing said services data to an interface transceiver in a service card; and sending said services data through a selected ~~an~~

~~appropriate~~ destination service port in said service collection unit, for transmittal to <u>a</u> ~~the~~ final destination.

30. (new) The method according to claim 1, wherein said step of sorting includes sorting the services data from a plurality of packets according to service type, and aggregating the sorted data from each different service for transmission over a compatible transport network.

31. (new) The method according to claim 1, wherein said step of sorting includes sorting the services data from a plurality of packets according to destination, and aggregating said sorted data according to destination for transmission over a compatible transport network.

32. (new) The method according to claim 31, further comprising:

receiving said aggregated services data, from at least one network, in one of said aggregator modules;

sorting or de-multiplexing the aggregated services data according to end destination;

processing the sorted services data into packets according to destination;

loading the packets onto an optical fiber for transmission to a more local network; and

unloading the packets from the fiber in a service collection unit;

switching the packets to local service ports in said service collection unit; de-packing the packets to different services data; and

sending data of each service to an appropriate media.

8